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Annual Meeting of the Association for Tropical Biology and Conservation

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Le Corum, Montpellier - France

Tropical Ecology and Society
Reconciliating Conservation and Sustainable Use of Biodiversity

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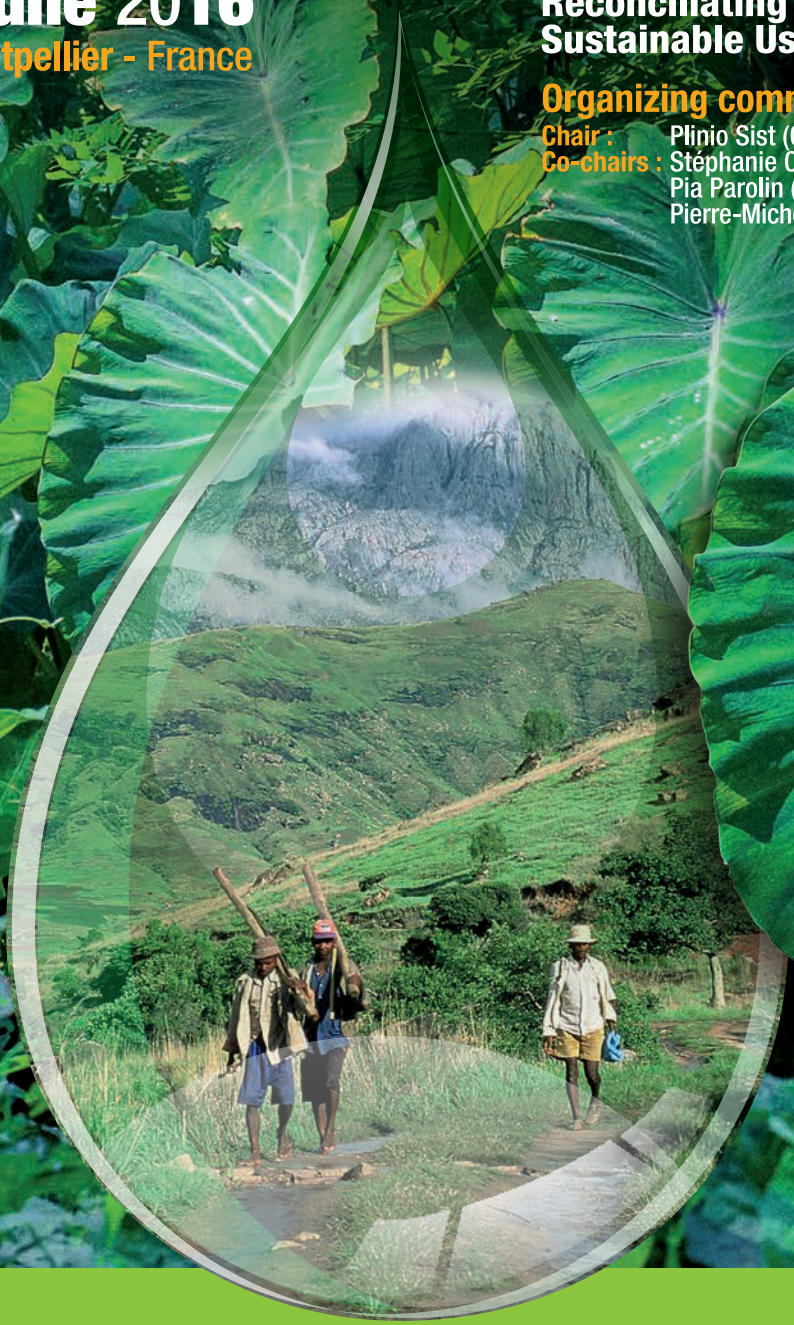

PROGRAM & ABSTRACTS

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O63-07 – S63 *Technology-driven revolutions in tropical ecology open new paths for understanding and mitigating development impacts on biodiversity*
Thursday 23 June / 14:30-17:00 – Antigone1

An Image-based Plant Identification Platform for Thousands of Species

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Pl@ntNet is a large-scale participatory platform dedicated to the collection of botanical observations thanks to crowdsourcing approaches and machine learning tools [a]. This initiative, supported since 2009, has allowed developing a computational infrastructure able to propose among others, a mobile plant identification service based on automated image analysis [b]. This service, freely available on iPhone (https://itunes.apple.com/fr/app/plantnet/id600547573?mt=8) Android (https://play.google.com/store/apps/details?id=org.plantnet) and the web (http://identify.plantnet-project.org/), was initially set up for a fraction of the European flora (800 species at the beginning), and now accounts 6 000 species of the European flora, other tropical regions such as Indian Ocean flora, French Guyana flora, and North African flora. With more than one million downloads in 3 years, and a daily use of more than 6 000 people per day, the infrastructure is now able to produce a huge volume of botanical observations contributed by a wide range of actors. An impact study conducted in 2015 has allowed collecting more than 700 responses to a survey dedicated to characterize contexts of uses, and the most important needs by the community of end-users.
Based on these feedbacks, we invested in several directions such as:
. the educational perspectives of this framework in order to define specific usage scenarios at school and university levels,
. specific functionalities such as the off-line function which represents a considerable evolution given the fact that it allows to use this system in field conditions, where 3G connection is lacking, as its often the case in tropical regions, or on tropical mountain ecosystems.
We propose to present this initiative, and the latest realizations tested through this infrastructure, and discuss their potentials impacts in biological conservation, educational perspectives, and biodiversity studies.
[a] Joly A., Goeau H., Bonnet P., Bakic V., Barbe J., Selmi S., Yahiaoui I., Carré J., Mouysset E., Molino J.F., Boujemaa N., Barthélémy D. 2014. Interactive plant identification based on social image data. Ecological Informatics, 23 : 22-34.
[b] Joly A., Bonnet P., Goeau H., Barbe J., Selmi S., Champ J., Dufour-Kowalski S., Affouard A., Carré J., Molino J.F., Boujemaa N., Barthélémy D. 2015. A look inside the Pl@ntNet experience. The good, the bias and the hope. http://dx.doi.org/10.1007/s00530-015-0462-9. Multimedia Systems : 16 p.

O63-08 – S63 *Technology-driven revolutions in tropical ecology open new paths for understanding and mitigating development impacts on biodiversity*
Thursday 23 June / 14:30-17:00 – Antigone1

The history and a picture of movement ecology in Brazil

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Background: Research on movement ecology in Brazil has increased significantly in the last years, but it is still sparse and fragmented. With the aim of locating and promoting integration between movement ecology researchers, the "I Movement Ecology Brazil Workshop" was held in September 2015 at São Paulo State University (UNESP), Rio Claro, Brazil. The meeting consisted of lectures, contributed talks and posters sessions and the participants discussed challenges and perspectives of this discipline in Brazil. In this contribution, we aim at synthesizing the state of the art of movement ecology in Brazil, based on both literature review and the results of the workshop.
Method: All the participants were invited to answer a questionnaire related to their study groups, kinds of technology and analysis used and research greatest challenges. We compiled the answers to the discussions promoted during the meeting to present a picture of movement ecology in Brazil. The synthesis of the meeting was complemented with a literature review of 30 years of research articles on movement ecology in Brazil, performed at the Web of Science.
Result: The event gathered researchers of more than 30 South-American institutions. The main methods used by the Brazilian movement ecology researchers are GPS and radio-telemetry, but the use of innovative technologies as accelerometers and sound-telemetry is increasing. Mammals and birds are the most studied taxa. The participants agreed that the greatest challenges on movement ecology in Brazil are data analysis, financial support and difficulties with new technologies, besides the few integration between researchers. Furthermore, there is a lack of studies with a deeper ecological approach, correlating movement and fundamental processes to ecosystems maintenance.
Discussion: Movement ecology studies in Brazil have increased exponentially on the last 10 years and this meeting was important for the presentation of the principal difficulties encountered by researchers, as well as to the discussion of solutions for the greatest challenges. The main recommendations to the meeting participants were a higher focus on ecological questions, data sharing on virtual databases and a better integration between researchers. Our synthesis on movement ecology is essential to conservation in countries